23UECA22B — RESOURCE MANAGEMENT TECHNIQUES

Time : Three hours   Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define feasible solution.

2. What are the different types of Linear Programming?

3. Define Degeneracy.

4. Give the main objective of Least Cost method.

5. List out the objectives of the assignment problem.

6. What is an unbalanced assignment problem?

7. Define PERT.

(b) The following details are available regarding a project :

Activity	Predecessor Activity	Duration (Weeks)
A	—	3
B	A	5
C	A	7
D	B	10
E	C	5
F	D, E	4

Determine the critical path, the critical activities and the project completion time.

15. (a) Find the optimal plan for both the player.

Player – B

		I	II	III	IV
	I	-2	0	0	5
Player – A	II	4	2	1	3
	III	-4	-3	0	-2
	IV	5	3	-4	2

Or

(b) Find the range of values of p and q which will render the entry (2, 2) a saddle point for the game.

Player B

		B_1	B_2	B_3
Player A	A_1	2	4	5
	A_2	10	7	q
	A_3	4	p	6

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Use the simplex method to solve the (LP) model:

Max $Z = 5x_1 + 4x_2$

Subject to

$$6x_1 + 4x_2 \le 24$$
$$x_1 + 2x_2 \le 6$$
$$-x_1 + x_2 \le 1$$
$$x_2 \le 2$$
$$x_1, x_2 \ge 0$$